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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/618,936
Filing Date: July 14, 2003
Appellant(s): BACHER ET AL.

William G. Conger
For Appellant

SUPPLEMENTAL EXAMINER'S ANSWER

Note: This Supplemental Examiner's Answer corrects section (8) to indicate references relied upon. Apart from this, nothing else has been changed.

This is in response to the appeal brief filed 4/17/2006 appealing from the Office action mailed 11/23/2005.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

US 4,879,336	Schilling et al	11-1989
US 4,617,239	Maruyama et al	10-1986

(9) Grounds of Rejection

The following grounds of rejection is applicable to the appealed claims:

Claims 1-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schilling et al (US 4,879,336) in view of Maruyama et al (US 4,617,239).

Schilling et al discloses a coating slip composition for printing bases such as paper (col. 2, lines 27-30) prepared by the method disclosed in col. 3, lines 22-44, wherein the composition comprises a cobinder polymer containing 50-95 wt % vinyl alcohol units, 5-50 wt % of 1-alkylvinyl alcohol units of 1-4 alkyl carbon atoms, and 0-5 wt % of other polymerizable monomers (col. 2, lines 36-65) which is preferably fully saponified with a Hoppler viscosity of 4-10 mPas (col. 1, line 61 to col. 2, line 4; Table 1 in col. 5). The vinyl alcohol units and alkylvinyl alcohol units are derived from hydrolyzed vinyl esters, e.g., vinyl acetate and isoprenyl acetate (col. 3, lines 23-26; col. 4, lines 34-37).

Schilling et al does not disclose the use of an ethylenically unsaturated silane-containing monomer, however, note that it is open to the use of any suitable additional monomer (col. 2, lines 45-46).

Maruyama et al discloses a paper coating agent and teaches that a modified polyvinyl alcohol containing silicon (co. 3, line 12 to col. 6, line 28) imparts water resistance, printability, surface strength, and barrier properties to a coated paper (col. 1, lines 9-40; col. 2, lines 8-13) when present in an amount of 0.01-10 mol % of the polyvinyl alcohol (col. 2, lines 58-61). It is presumed that the improvement in the aforementioned properties is due to a reaction between the silicon portion of the modified PVOH with the paper substrate which provides for a firm uniform surface layer that does not penetrate into the paper (col. 9, line 8-26).

Given that Schilling et al is open to the use of another monomer and given the benefits of utilizing an ethylenically unsaturated silane-containing monomer in a PVOH binder for paper applications as taught by Maruyama et al, it would have been obvious to one of ordinary skill in the art to utilize a silane-containing monomer in the polyvinyl alcohol of Schilling et al.

With respect to claim 15, note that the phrase "suitable for use in ink jet printing" in is intended use which is given no patentable weight. Regardless, it is considered that it would have been obvious to one of ordinary skill in the art to utilize Schilling et al's paper in such a common paper printing application, there being no evidence or suggestion otherwise.

(10) Response to Argument

Appellants argue that Schilling et al does not teach improved storage stability.

First, note that the citation from Schilling et al on page 4 of the Appeal Brief is only col. 2, lines 7-24 and not the full citation by the examiner which was to col. 2, lines 7-34. Second, note that the examiner referred to col. 2, lines 7-34 to show in what the prior art was deficient and how Schilling made up for those deficiencies (i.e., solubility and "pigment shock"). While

Schilling et al does not teach improved storage stability as negligible increase in viscosity as apparently defined by appellants, Schilling et al teaches that its invention improves upon solubility which is an indicator of storage stability since precipitation out of solution is a type of storage instability.

Appellants argue that the problem with Maruyama et al is that its polymers contain ethylenically unsaturated silane-containing monomers with reactive silanes which, when reacted with water, leads to viscosity increases and eventual undesirable gelling (evidenced by appellants' Comparative Example 1).

Note col. 7, lines 61-64 where Maruyama et al states that the reactive groups "*may* partly form siloxane bonds" (emphasis added). Therefore, these reactions only may occur and hence the viscosity increases and undesirable gelling only fall within one possible embodiment of Maruyama et al. Furthermore, it is not made clear how Comparative Example 1 reads on the copolymers of Maruyama et al since all that is disclosed is that the comparative copolymer is a "[c]ommercial silane-containing polyvinyl alcohol" with no indication of how closely it reads on Maruyama et al's embodiments or if it even has an ethylenically unsaturated silane-containing monomer. Finally, while the copolymer of Maruyama et al may be unstable, the copolymer itself of Maruyama et al is not utilized in the outstanding rejection. Rather, it is the copolymer had by combining the teachings of Schilling et al and Maruyama et al.

Appellants argue that there is no evidence that Schilling et al does not have a gelling problem and that there is no way that one skilled in the art could have predicted that upon

addition of ethylenically unsaturated silane-containing monomers to the polymer of Schilling et al that the silane-containing copolymer would be free from gellation.

Schilling et al discloses the use of alkylvinyl alcohols, which intrinsically provides for no gellation problem. The alkylvinyl alcohol is already present in Schilling et al's copolymer and it is only the addition of the ethylenically unsaturated silane-containing monomer of Maruyama et al that is rendered obvious. Considering that the copolymer of Maruyama et al does not necessarily have a gelling problem (col. 7, lines 61-64), it is expected to not have a gelling problem with the presently claimed copolymer that contains both alkylvinyl alcohol and ethylenically unsaturated silane-containing monomer.

Appellants argue that there is no motivation to combine Schilling et al with Maruyama et al to obtain the desired storage stability and abrasion resistance properties.

Schilling et al and Maruyama et al are both to polyvinyl alcohol coating slip compositions. Maruyama et al teaches the benefits of using an ethylenically unsaturated silane-containing monomer such as improved water resistance, printability, surface strength, and barrier properties. Schilling et al is clearly open to the use of other monomers and hence one of ordinary skill in the art would be motivated to use such an advantageous monomer as taught by Maruyama et al to obtain said advantages. Although Schilling et al uses the alkylvinyl alcohol for other reasons (i.e., improvements on solubility and "pigment shock), case law holds that it "does not alter the conclusion that its use in a prior art composition would have been *prima facie* obvious from the purpose disclosed in the reference." *In re Linter*, 458 F.2d 1013, 173 USPQ 560 (CCPA 1972).

Appellants argue that they have surprisingly and unexpectedly discovered that the addition of 1-alkylvinyl alcohol comonomers to silane-containing polymers provides improved storage stability and abrasion resistance.

It is the examiner's position that appellants' data in the specification as originally filed is insufficient to establish unexpected and surprising results since the data is not commensurate in scope with the claimed invention. Case law holds that evidence is insufficient to rebut a *prima facie* case if not commensurate in scope with the claimed invention. *In re Grasselli*, 713 F.2d 731, 741, 218 USPQ 769, 777 (Fed. Cir. 1983). In particular, see the comparison in the table below of polyvinyl alcohol copolymers prepared from vinyl esters and ethylenically unsaturated silane-containing monomer used in the inventive example.

Claims	***Inventive Example 1***
One or more vinyl esters of straight-chain or branched alkane carboxylic acids having 1 to 18 carbon atoms	vinyl acetate
One or more 1-alkyl vinyl esters of C_{1-6} carboxylic acids where the 1-alkyl groups are C_{1-6} alkyl radicals	isopropenyl acetate
One or more silane-containing, ethylenically unsaturated monomers	vinyltriethoxysilane

It is clear from the above table that the exemplified polyvinyl copolymer is not commensurate in scope with the claimed monomers. Case law holds that evidence of superior properties in one species insufficient to establish the nonobviousness of a subgenus containing hundreds of compounds). *In re Greenfield*, 571 F.2d 1185, 1189, 197 USPQ 227, 230 (CCPA 1978).

Furthermore, the inventive and comparative examples are not proper side-by-side examples since the copolymer of the comparative example is only defined as a "[c]ommercial silane-containing polyvinyl alcohol." A proper side-by-side comparison to inventive Example 1 would be to have a polyvinyl alcohol derived from vinyl acetate and vinyltriethoxysilane and not include isopropenyl acetate.

Appellants argue that the age of the cited references supports the patentability of the claimed subject matter.

In response to applicant's argument based upon the age of the references, contentions that the reference patents are old are not impressive absent a showing that the art tried and failed to solve the same problem notwithstanding its presumed knowledge of the references. See *In re Wright*, 569 F.2d 1124, 193 USPQ 332 (CCPA 1977).

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

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